Analysis Efforts for Approach Spacing

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Plan Elements -- Speed Control

- **Monte-Carlo simulation**
- **Evaluate alternative speed control laws**
  - **Stability**
  - **Ability to reduce mean and variance in inter-arrival times**
- **Optimize speed control law**
- **Evaluate potential improvement in arrival throughput**

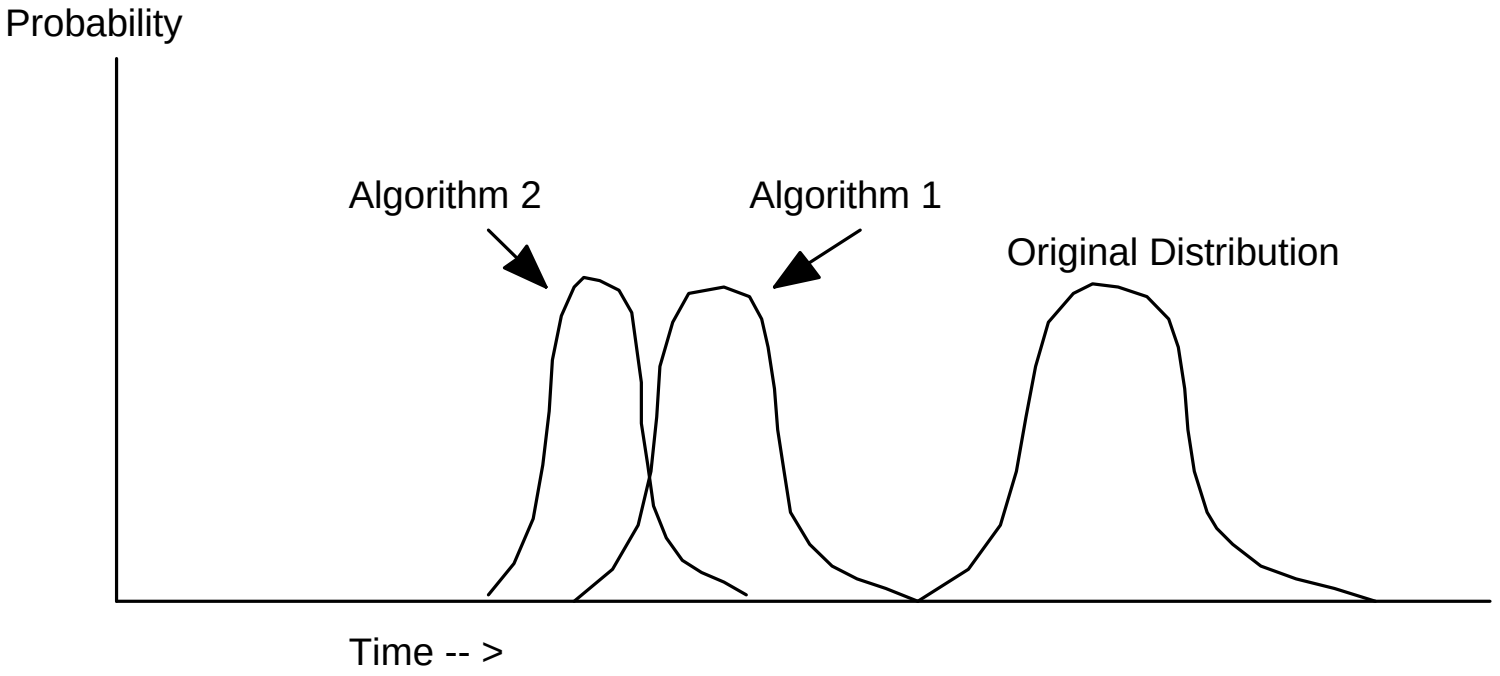
Elements -- alerting

- Develop alerting scenarios
- Optimize algorithms
- Determine surveillance elements and performance to support alerting

Monte-Carlo (Fast Time) Simulation

- Originally developed to support TCAS horizontal miss distance filter analysis
- Evolved to support analysis of requirements for ADS-B MASPS
- Full surveillance models of ADS-B, SSR, TCAS
- Navigation system models for ILS, DME, GPS
- Includes process noise model for approach total system error (TSE)
- Can run 100 25 mile approaches in about 30 seconds
- Can run multiple approaches in a stream
- Can use to develop an analytic, statistical basis for choices

Example of Evaluation Criteria



Example Simulation Results -- Spacing Control Laws